Eden Electronics Operation Manual
World Tour Series Amplifier

WT-400 Bass Amplifier LN
Traveler Plus

Owner's Manual

EDEN

THE STANDARD IN BASS SOUND.

Revised 2/06/03

WT-400 Operations Manual

Congratulations on your purchase of the Eden WT-400 Traveler Bass Instrument Amplifier. You have purchased what we feel is one of the finest bass amplifiers in the world. The WT-400 produces 400 watts of pure power into 4 ohms (235 watts into 8 ohms) with 3db of dynamic headroom. The tube preamp section, with its enhance control, powerful quasi-parametric tone control system, and gentle auto-compression circuit allow you to achieve a wide array of sounds. This compact, rack mountable package houses modular circuits made with superior components and designed for years of trouble-free service.

Thank you for choosing Eden. Please take the time to review this manual and to send in your warranty registration card.

CAUTION!

Your ears are your most important piece of equipment. Unfortunately, they cannot be replaced as easily as your other gear. Please take the following warning seriously.

This product, when used in combination with a sound source and loudspeakers or headphones, may be capable of producing sound levels that could cause permanent hearing loss**. DO NOT** operate at high volume levels or at a level that is uncomfortable. **DO NOT** place your ears next to the speakers. If you experience any discomfort or ringing in the ears or suspect hearing loss, you should consult a health care professional.

Please complete for your records:

Date of Purchase: _____

Model: _____

Serial Number: _____

Dealer: _____

FRONT PANEL FEATURES

Input Jack – Designed to accept a standard ¼ inch mono phone plug. For best results, use a high-quality, shielded cable to connect your instrument to the amplifier.

Input Pad – By pulling the Gain control knob out, you engage a –12db pad, which will prevent the system from being overdriven by high-output instruments.

Pad Indicator – Lights to indicate that the pad is engaged.

Gain Control – Regulates the first gain stage of the preamplifier and controls the amount of signal available to the system.

Set Level Indicator – Lights to indicate that the preamp is sitting right on the sweet spot of the gain balance and is at optimum signal to noise as well as best overall headroom.

Compressor Indicator – Lights to indicate that the signal has crossed the threshold of the compression circuit and that compression is taking place.

Compressor Bypass – Pulling the enhance knob out will disengage the compressor.

Enhance Control – Called the "Magic Knob" by some, this complex control simultaneously boosts the very low-bass, upper middle and high frequencies, while putting a dip in the lower middle frequencies. It is flat when set to its minimum level.

Tone Control Section

Bass – This traditional shelving tone control provides 15 db of boost or cut at 30 Hz.

Quasi-Parametric Tone Control – These three pairs of controls, with overlapping frequencies, allow you to boost or cut the tone at the desired frequency center. The one octave fixed bandwidth (Q=1) allows the controls to interact smoothly and musically.

Frequency control – Provided for low, mid, and high frequency ranges, these controls select the frequencies you wish to boost or cut.

Boost/Cut Controls– Located beneath each frequency selection control, these controls will boost or cut the selected frequency by 15 db. They are flat at their 12:00 setting.

Treble – This is a traditional shelving-type tone control. It provides 15 db of boost or cut. The knee of the filter is at Approximately 2KHz. The control is flat at the 12:00 position.

EQ Clip Indicator – Flashes to indicate clipping within the tone control circuit of the preamplifier. This should never be lit up.

Master Level Control – Adjusts overall system output.

Headphone Jack – Accepts standard ¼ stereo or mono headphone plug.

Output Limit Indicators – Lights to indicate activity of the power amplifier limiting circuit, which protects the speaker system from severe distortion. This LED indicates that the amplifier has reached its maximum output level.

On/Off Switch – This switch turns the system power on or off. The switch illuminates to indicate the presence of current prior to the fuse. The indicator light will come on even if the fuse is blow as long as the AC cord it plugged into the wall power. This is a safety feature required in some countries.

REAR PANEL FEATURES

Combination Power Cord Jack and Fuse Holder – The removable power cord is attached here. Pulling the holder out of the top of the power inlet accesses the fuse carrier. Your unit was shipped with a spare fuse inserted in the fuse carrier. **USE ONLY THE SAME SIZE AND TYPE FOR REPLACMENT.** U.S. users should make sure the fuse holder is installed so the "115 VOLTS" reads right side up. For Europe the 230 should be right side up. Some European models come with a holder marked (FUSE) they are configured for 230 / 240 only and must be adapted by a service tech for U.S. standard voltage. The standard fuse for U.S. use is (5) Amp slow blow or time delay.

Do not use fast blow fuses.

Amp Out – These two ¼ inch jacks accept the speaker connection cables. The jacks are wired in parallel. The total speaker system impedance should not exceed 4 ohms.

Effects Send/Return – These standard ¼ jacks allow you to send and receive your signal to and from external devices. The effects loop is positioned post (behind) the compressor and enhance control and prior to the tone section.

Recording Out – This fully balanced XLR output allows you to send a post-EQ/pre-master signal to a recording or sound reinforcement mixing console. This output is designed to allow use with phantom powered systems. Pin 2 + signal.

D.I. Level – Controls the level being sent from the XLR balanced output jack.

Ground Lift Switch – This switch lifts the ground within the balanced output system to allow you to eliminate excessive noise when connected to external systems.

AUX In Right / Left - These standard ¼ mono jacks are designed to accept the stereo signal from an external source such as a CD or cassette player, drum machine, synth, module, etc. The stereo signal is summed prior to the master volume control. The signal enters the system post the tone controls. These jacks can also be used to return a studio cue signal, allowing the WT-400 to provide you with your own headphone mix in the studio.

Tuner Out Jack – This standard ¼ inch jack is designed to provide a post-tube, pre-gain signal for connection to a tuner. It can also be used to provide pre-tone signal to other devices such as a direct box or console.

Cooling System – Your amplifier features a thermostatically controlled fan, which will switch on when the internal temperature reaches 130 degrees F. In low volume situations (into 8 Ohm loads) the fan may not come on at all. The system also features a high temperature thermal safety system that will activate if the operating temperature goes above 200 degrees F. This circuit will turn the system off in the event of overheating. It will automatically reset itself as soon as the unit cools down to a safe operating temperature. Usually it takes from 2 to 5 minutes before the unit will begin to operate again. (Note: the D.I. will continue to operate normally even when the amplifier is in thermal shut down only the stage sound will be lost.)

OPERATING INSTRUCTIONS

MECHANICAL AND THERMAL ISSUES – Your amplifier should always be placed for operation away from sources of moisture or heat. Care should be taken not to obstruct the ventilation holes on the top and sides of the unit. In the event of thermal shutdown, you should eliminate the cause of the thermal problem (poor ventilation, speaker loads lower than 4 ohms) immediately. The supplied rack ears can be used to install your amplifier in a conventional equipment rack for protection during transportation.

ELECTRICAL CONNECTION – The WT-400 requires at least 12 Amps of correctly wired alternating current for proper operations.

CONNECTIONS – All line connections (everything but the speakers) should be

made with high-quality shielded cables. The use of speaker cables for line connections will result in excess noise. Speaker connections should be made with high-quality 16 gauge or larger unshielded speaker cables. We recommend 10 or 12 gauge cables. The use of shielded line or instrument cables for speaker connections can damage your amplifier. The speaker cable should be as short as possible.

TURN ON – We recommend turning your system on with the master volume control set to its minimum position. This will prevent any unexpected signal from being sent to your speakers.

SETTING YOUR LEVEL – Effective use of the gain control will ensure the best signal-to-noise ratio. The Set Level, Compressor, and EQ Clip indicators are all provided to assist you in setting your level correctly. You should begin the process with your master control set to a low, or off position, and your tone controls set flat. While playing your instrument normally, bring the gain control up until the set level light or the compressor light winks on the peaks that result from your strongest normal attack. This will generally show up most on your lower strings. You will use the compressor light if the compressor is engaged (enhance knob pushed in) and the Set Level light if the compressor is disabled (enhance knob pulled out). If more compression is desired, increase the gain control so the compressor light comes on more readily. Having set your initial level, you are now ready to proceed with setting up your tone controls. Since tone adjustments have an impact on the overall preamp gain level, you may well need to return to the gain control and repeat this process once you have completed your EQ adjustments.

SETTING UP YOUR EQ

Begin with all tone controls set flat and with the Enhance Control set to its minimum position. After setting your Gain level, bring the Master control up to a moderate level. Slowly bring the Enhance control up, playing as you make each adjustment. Many players find that there is a small amount of boost on the Enhance control that will get them very close to the sound they are after. If it doesn't return it to the minimum or 0 position.

Overall bass and treble adjustments can be made with the Bass and Treble controls. These controls cover a fairly broad range of the frequency spectrum. Many players use these controls to compensate for acoustic situations, relying on the Enhance and Parametric controls to achieve their basic sound.

Effective use of the quasi-parametric section can help you boost and/or cut more narrow sections. In each band, you will need to "find" the frequency you wish to boost or cut. The fastest way to do this is to boost the Level control of one section significantly, then rotate the Frequency control above it. If you hear more of a frequency than you like, leave the Frequency control at that spot and reset the level to the desired amount of boost. Conversely, if you hear a frequency which is undesirable, leave the Frequency control at that spot and reduce the Level control to the desired amount of cut.

The frequencies that you will need to boost or cut are dependent upon your instrument, playing style, speaker cabinets, and venue. Extreme settings of boost or cut are unlikely to be necessary or helpful.

We are frequently asked to provide suggested settings for various styles of play. We have discovered though, that most of our endorsers tend to set their EQ generally flat, using varying amounts of the Enhance Control. We encourage you to experiment with different settings to obtain the sound you desire. We have included some EQ panel diagrams at the back of this manual to help you record your settings.

EQ Clip Light – This indicator will flash if clipping occurs in the EQ section of the preamp. This can be remedied by decreasing the amount of boost in the EQ section or by decreasing the Gain control. This light should never be on while playing.

Other EQ Considerations – If you find yourself running out of amplifier headroom, cut a little in the lower frequencies, which require the most power from your amp.

Two areas are a frequent source of frustration for bassists trying to achieve their sound: frequency masking and frequency enhancement. Frequency masking occurs when other instruments (particularly cymbals and electric guitars) obscure the important upper harmonic content of your sound. As a result, you find that the EQ settings that were so perfect at home lack definition in a live setting. On the other hand, the stage settings that worked so well sound harsh and/or thin in the absence of other instruments. Frequency enhancement results from cabinet placement and room acoustics. A cabinet placed on the floor will have the lower frequencies boosted by about 3 db. Placement against a wall adds another 3 db. A corner adds 3 db more. Consequently you may find a surprising boominess to your sound. Certain qualities in the room itself can also enhance the lower frequencies, further contributing to this problem. Frequently this effect is more noticeable in the audience than it is on stage. Compensating for it may result in a stage sound that may seem a little thin. However the sound is actually quite full out in front.

OTHER CONSIDERATIONS

Suggested Speaker Systems – Your speaker system, should be chosen to accommodate the characteristics of your amplifier and your predominant application. If you will only be using one cabinet, a 4 Ohm model will draw the most current from your amplifier. If you will generally be using two cabinets, they should be 8 Ohm models so their combined impedance will be 4 ohms. If you are uncertain about your future needs always go with the 8 Ohm speaker option so that you can add another speaker later if you need to. Common Eden David Series cabinets chosen to accompany the WT-400 include:

(1) D115XLT or D210XLT 4 Ohm cabinet
(1) D410XLT 4 Ohm cabinet
(2) D210T or D210XLT 8 Ohm cabinets
(1) D410T or D212XLT 4 Ohm cabinet
(1) D115XL & (1) D210T 8 Ohm cabinet

Headphone Jack as Line Driver – On some occasions (such as high-volume or outdoor situations) it may be desirable to use the WT-400 along with an additional power amplifier and added cabinets. A standard shielded instrument cable may be used to connect from the headphone jack of the WT-400 to an unbalanced input of a standard power amplifier. This will provide a signal that is post EQ and master volume controls, allowing the entire system to be controlled from the WT-400.

Using the WT-400 Without Speakers
This amplifier is designed to be used safely with headphones only,. Without the loud speaker plugged in. No harm will result from using the amplifier in this fashion. This allows the use of the unit for practice with headphones and as a preamplifier with other amplifiers.

MAINTENANCE

Your Eden amplifier has been designed to require minimal routine maintenance. Attention to the following areas will ensure optimum performance of your amplifier.

Contact Point Cleaning – One of the weakest links in most bass amplification systems are the solderless connection points where instruments, speaker cabinets, effects, and other devices are connected to the amplifier. (The most vulnerable of these types of connection is the jack on your instrument). In addition to contamination from airborne pollutants, these points are frequently assaulted by connectors that have picked up debris from dirty stages, cases, etc. These points should be cleaned regularly with a cotton swab soaked in denatured alcohol or a commercially available deoxidant. Frequent cleaning of the plugs on your cords is also recommended.

Dust Removal – You should periodically inspect the ventilation openings on the top and sides of the unit to ensure that they have not become blocked by accumulated dust. Vacuum the openings to remove any dust buildup.

Tube Replacement – Tube life varies greatly depending upon use, vibration, and tube quality. It is uncommon for a tube to last less than a year in our circuits. Tube life of several years is not at all uncommon. Symptoms of tube failure include signal loss, distortion, and increased noise. The tube is easily replaced by removing the unit's cover. **Always disconnect the power cord from the back of the unit prior to removing the cover.** Gently remove the tube and replace with a genuine Eden 7025 / 12AX7 or equivalent tube.

Service – In the event of amplifier malfunction, or questions about your unit's operating features, you should contact your Dealer, the factory or one of our authorized service centers for assistance.

Please call our Customer Service dept. at

1-800-USSOUND
(1-800-877-6863)
extension 5120

for more information or to obtain a Return Authorization number and instructions for factory returns.

Please ship Authorized Returns for service to:

Eden Electronics
115 2nd St.
Montrose, MN 55363

Eden Electronics, Inc.
C/O U.S. Music Corp.
444 E. Courtland Rd.
Mundelein, IL 60060
(847) 949-0444
(847) 949-8444(fax)
eden@eden-electronics.com
http://www.eden-eletronics.com

EQ Settings

Setting name: _____

Setting name :_____

Setting name: _____

Record your Favorite Tone settings